ment support. The top-down nature of the WBS makes it meaningful to both management and team members.

A good WBS won't guarantee success. The five success factors won't guarantee success. But they do turn the odds in your favor. Given the challenging nature of projects — that is an edge you can't afford to ignore.

Summary

In this article we've recognized that the nature of projects *(temporary and unique)* poses challenges that are addressed by the discipline of project management. With a systematic approach to clarifying the goals and constraints of a project, creating a detailed plan, and managing from that plan, we improve communication, management support and ultimately the chance for project success.

The WBS is just one of many proven project management techniques you can easily learn and apply to your project or to a piece of a larger project. It provides a framework for breaking down a large, complex, unique chunk of work (a project) into small, manageable tasks and enables you to keep an eye on both the details and the big picture.

In the next article in this series we'll switch perspectives and focus on the human element — how to build a cohesive, high performing team. Throughout all these articles, you will see that project management is a collection of skills and techniques that you can learn and apply to achieve results.

Sources:

1. Verzuh, Eric, The Portable MBA in Project Management, New York, John Wiley & Sons, 2003.
2. Verzuh, Eric, The Fast Forward MBA in Project Management, New York, John Wiley & Sons, 1999, p. 7-8.

Eric Verzuh, a Project Management Professional, is President of The Versatile Company, a project management training firm. He is the author of the best selling book, "The Fast Forward MBA in Project Management." His latest work, "The Portable MBA in Project Management," is due out in May 2003. His firm has delivered project management courses to over two hundred SPAWAR personnel in Norfolk, Va., and Charleston, S.C., since 2001.

NAVAIR Continues Joint Testing on Upgraded E-6B

By Renee Hatcher, Public Affairs Office

An E-6B Mercury, modified with a new cockpit and an advanced communications package arrived at Naval Air Station Patuxent River in January, where joint testing by VX-20 and Boeing E-6 test teams is continuing. The E-6 is a communications relay and strategic airborne command post (ABNCP) aircraft.

VX-20 is an Air Test and Evaluation Squadron providing *"Full Spectrum Flight Test for the Fleet."* The squadron consists of more than 400 talented test pilots, aircrew, engineers and support personnel who are committed to delivering efficient, comprehensive safe flight testing and engineering services. These services are delivered with a sophisticated fleet of approximately 30 current production and legacy aircraft.

"It's a great situational awareness enhancer," said Lt. Bob Strahm, project test pilot. "These improvements will do great things for the TACAMO community."

TACAMO refers to the Navy's *"Take Charge and Move Out"* mission. It is a Navy Air Wing fully integrated on an Air Force base, carrying out a Navy mission in joint operations. Commander, Strategic Communications Wing One provides operational control and administrative support for Fleet Air Reconnaissance Squadrons Three, Four, Seven and various training units. The Navy's TACAMO community provides a survivable communications link between national decision makers and the country's arsenal of strategic nuclear weapons. The E-6B Mercury aircraft enables the President of the United States and the Secretary of Defense to directly contact submarines, bombers, and missile silos protecting national security through nuclear deterrence.

The E-6 is a long-range, air refuelable aircraft equipped with four CFM-56-2A-2 high bypass ratio fan/jet engines with thrust reversers. The weapon system is electromagnetic pulse hardened. The has an endurance of more than 15 hours without refueling and a maximum endurance of 72 hours with in-flight refueling. Mission range is over 6,000 Nautical Miles (NM). It carries a crew of five officers, nine enlisted aircrewmen and up to four trainees for TACAMO missions. For ABNCP missions it carries five Naval officers, nine Naval enlisted aircrewmen and an eight person battle staff as determined by the United States Strategic Command (J36).

E-6B is a dual-mission aircraft capable of fulfilling either the E-6A mission (communications relay for fleet ballistic missile submarines) or the airborne strategic command post mission, and it is equipped with an airborne launch control system (ALCS). The ALCS is capable of launching U.S. land-based intercontinental ballistic missiles.

The mission system and cockpit display upgrades will improve mission avionics, provide additional data processing capabilities, and increase reliability and maintainability for the Mercury. The upgrades also provide Automated Data Processing, Demand Assigned Multiple Access (DAMA) and Weight Savings (ADWS). Wide bandwidth data capability is also included through integration of a phased array antenna system. The improvements include SIPRNET and NIPRNET functions. Highlights of these functions include two separate onboard servers (classified and unclassified), access to servers on the ground via command managed local area network communication links, airborne user interface via laptop computers, and Ku band (high-speed) uplink and DAMA or Northstar Network (up to 16Kbps) downlink.

The upgraded cockpit is equipped with the Multifunction Display System (MDS) that is based on the Boeing Commercial 777 and 737-700 next generation avionics technology. The MDS will provide the fleet with state-of-the-art communications, navigation and surveillance capabilities in order to address emerging Global Air Traffic Management (GATM) requirements.

Capt. William G. Okoniewski manages NAVAIR's E-6 Program Office (PMA-271).